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(VITRO-R-286)

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DECOMMISSIONING OF DMA EQUIPMENT AT RICHLAND

QUARTERLY STATUS REPORT

FOR PERIOD ENDING JUNE 30, 1974

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Prepared by:
Production Operations Branch
Production & Waste Management
Programs Division
July 1, 1974

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DECOMMISSIONING OF DMA EQUIPMENT AT RL

SUMMARY

This project is progressing under the authorizing November 12, 1973, TWX from AL to RL. It provides for removal of the retired equipment in the 234-5 Building, its packaging and burial suitable for 20-year retrieval. The building area affected will be decontaminated and made available for other purposes.

Work is progressing on removal of the inspection equipment in Room 192 (Figure 7) with two hoods having been detached from the conveyor head. No contamination exterior to the hoods has occurred.

Document, Vitro-R-286 and its addendum are attached. They provide the sequence for removal of the inspection line equipment and the special procedure for removal of Hood HI-74.

Twelve steel burial boxes have been received and 30 fiberglass burial boxes are in transit from Rocky Flats.

No unusual problems have been encountered.

PROJECT PROGRESS

The removal of auxiliaries from the inspection area was officially started on May 28, 1974. Initial work consisted of removing electrical services, instrumentation, lead and lead glass shielding, and other appurtenances external to the glove boxes and conveyor. All of the equipment and materials are being carefully surveyed and, where possible, released for reuse or salvage. The majority of lead was found free of contamination and is being accumulated on pallets for salvage. The lead glass will be stored onsite for potential use on future planned facilities.

Battelle Northwest was contacted to inspect the instruments, electrical switchgear and similar equipment being removed for possible use elsewhere on the Hanford Project. All releasable equipment will be accepted in the Battelle Northwest 300 Area laboratory central pool for use by any other organization needing the equipment. None of the material will be released for salvage unless resurveyed and unconditionally released by Battelle Northwest. Overall, it is estimated that the reuse and salvaging of these materials and equipment will reduce the total weight originally destined for transuranic burial by 15 to 20 percent.

Removal of the first inspection glove box, HI-67G, from the conveyor line was completed on June 6, 1974, using standard greenhouse techniques. The second glove box, HI-71NC, was removed on June 25, 1974, and both glove boxes have been set aside and connected to a temporary exhaust ventilation system until they can be removed for packaging in 20-year retrievable Fiber-glass Reinforced Plastic (FRP) plywood boxes. (See Figure 7 for location of equipment.)

The design of the various sized FRP boxes to contain the glove boxes is being completed by Vitro. It is planned to fabricate the first five boxes onsite as test units before submitting the balance of about 50 boxes required for competitive bids. In addition to the larger boxes, it was arranged to obtain 30 standard four foot by four foot by seven foot FRP plywood boxes directly from the Dow Chemical Company, Rocky Flats Plant. The unit cost for these boxes was \$300, not including shipping charges. The boxes will be utilized for auxiliary contaminated equipment such as pumps, filters, ducts, and piping.

The order for 12 steel boxes fabricated by Metalfab, Inc., West Richland, Washington, has been completed and units delivered to the work site. These boxes will be used for heavy auxiliary equipment and small conveyor sections.

A new exit door to be located on the north side of the inspection area will provide the most practical routing for removal of the large glove boxes to the outside loading area. The door will be located in the north wall near HI-67 and 71 (Figure 7). This approach is an alternate to removal of the east wall of the inspection area, with the loss of both airlock and security control. Vitro is presently in the final stages of design for this architectural change. In addition to this design work, Vitro has completed and issued the check sheet procedures for sequencing the dismantling operations, and a special procedure for removal of the complex HI-74 Storage and Loadout glove box from the conveyor.

COSTS

As of June 30, 1974, \$41,437 has been expended by Vitro for design and related work. J. A. Jones Company has expended \$73,533, including the steel box commitment. Miscellaneous service costs are \$3,730 for a total of \$119,000. The project estimate and cost is on Figure 8.

At this point, the overall progress is estimated at five percent complete. It is expected that work progress will increase significantly as soon as the new access door is completed. By that time, at least five glove boxes and two 20-foot sections of conveyor will have been removed and will require only loading into transuranic boxes.

Attachments:
Vitro-R-286 and
Addendum

Figure 1. Plastic greenhouse for hood detachment.

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Figure 2. Temporary hood vacuum line.

Figure 3. Hoods HI-71 and HI-67 detached.

Figure 4. Hood HI-74 with water walls.

Figure 5. Hood HI-74, water walls removed.

Figure 6. Hood HI-74. Arrow indicates cutting point to ease removal.

DMA Equipment Removal

COST STATUS
AND
PROJECT ESTIMATE

	Actual Costs	Estimated Costs	Total by Fiscal Year
FY 1974	\$119,000		\$ 119,000
FY 1975			
1st Quarter		\$383,970	
2nd Quarter		582,780	
3rd Quarter		245,100	
4th Quarter		<u>246,000</u>	<u>1,457,850</u>
FY 1976		442,150	442,150
Total Project			<u><u>\$2,019,000</u></u>
Project Completion			5%

Figure 8

SEQUENCE AND CHECK SHEETS FOR THE
DIVISION OF MILITARY APPLICATION (DMA) EQUIPMENT
REMOVAL FROM 234-5Z BUILDING

HI Line Equipment

VITRO ENGINEERING • architects • engineers
a division of AUTOMATION INDUSTRIES, INC.

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VITRO-R-286

SEQUENCE AND CHECK SHEETS FOR THE
DIVISION OF MILITARY APPLICATION (DMA) EQUIPMENT
REMOVAL FROM 234-5Z BUILDING

HI Line Equipment

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June 1974

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For the U.S. Atomic Energy Commission
Contract No. AT(45-1)-1698

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Section 1

General Outline for Equipment Removal
and Retrievable Storage Procedures

GENERAL OUTLINE FOR EQUIPMENT REMOVAL AND RETRIEVABLE STORAGE PROCEDURESHI-INSPECTION LINE (ONLY)

1.0 PREPARATION OUTSIDE OF THE 234-5-Z BUILDING

- 1.1 Establish Equipment Storage Areas
- 1.2 Assemble Required Tools and Equipment
- 1.3 Radiation Survey of Storage Area
- 1.4 Verify Weather Suitable for Outside Packaging
- 1.5 Inform Security Organization of Area Being Used
- 1.6 Remove Obstructions and Surplus Equipment from Storage Area and Transport Route

2.0 PREPARATION INSIDE OF THE 234-5-Z BUILDING

- 2.1 Establish Equipment Storage Areas
- 2.2 Establish Location of Power Off for Electrical, Hydraulic Pneumatic, Etc.
- 2.3 Assemble Required Tools and Equipment
- 2.4 Radiation Survey of Storage Area
- 2.5 Inform Security Organization of Area Being Used
- 2.6 Remove Obstructions and Surplus Equipment from Storage Area and Transport Route

3.0 BUILDING PREPARATION

- 3.1 Structural and Shoring Changes
 - 3.1.1 New Exits (Exterior Wall Openings)
 - 3.1.2 Access Through Inside Structural Walls
- 3.2 Ventilation
 - 3.2.1 Establish low pressure in area of equipment being removed
 - 3.2.2 Install new air locks where necessary to allow removal to exterior retrievable storage boxes or storage area
 - 3.2.3 Re-balance ventilation system to new conditions
- 3.3 Contamination--Perform radiation survey of removal paths inside building

4.0 WORK AREA PREPARATION

4.1 Perform Radiation Survey of Work Area

4.2 Turn Off Services to Specific Gloveboxes, Conveyors, or Equipment being Removed

4.2.1 Electrical

4.2.2 Pneumatic

4.2.3 Hydraulic

4.2.4 Water

4.3 Prepare Area for Work

4.3.1 Cover floor

4.3.2 Erect air flow barriers

4.3.3 Erect working signs

4.3.4 Lock or close doors to maintain traffic control

4.3.5 Bring in required additional building services (if required)

4.3.5.1 Electrical

1. 110 VAC

2. 220 VAC (single or three-phase or both)

3. 440 VAC (single or three-phase or both)

4.3.5.2 Water

4.3.5.3 Hydraulic fluids other than water

4.3.5.4 Compressed air

4.3.5.5 Heat and cooling

4.3.6 Install additional lighting (if required)

5.0 EQUIPMENT AND MATERIAL REQUIRED BEFORE STARTING TO REMOVE EQUIPMENT

5.1 Hand Tools

5.1.1 Non-disposable

5.1.2 Tools to be stored with equipment

5.2 Clean-Up Supplies

5.2.1 Rags

5.2.2 Vacuum Cleaner

5.2.3 Filters

5.3 Pallets

5.4 Protective Covers

5.5 Containment Barrels for Liquids

5.0 EQUIPMENT AND MATERIAL REQUIRED BEFORE STARTING TO REMOVE EQUIPMENT (Continued)

- 5.6 Blank-Off Plates and Gaskets
- 5.7 Rigging Equipment
- 5.8 Retrievable Storage Containers (Small Solid Items)
- 5.9 Containment Barrier Material
- 5.10 Machine Tools

6.0 PERSONNEL EQUIPMENT

- 6.1 Protective Clothing
- 6.2 Health Badges
- 6.3 Protective Masks
- 6.4 Dosimeters
- 6.5 Communication Devices
- 6.6 Protective Gloves
- 6.7 Breathing Air Supplies
- 6.8 Radioactivity Recording Devices

7.0 PREPARATION PRIOR TO MOVING EQUIPMENT OR INSTALLING BLANKING PLATES

- 7.1 Remove Selected Non-Contaminated Equipment
 - 7.1.1 Determine exactly what non-contaminated equipment is to be removed
The sequence of equipment removal is specified in Part II.
 - 7.1.2 Prepare container to receive removed item
 - 7.1.3 Remove item of equipment
 - 7.1.4 Clean and survey equipment removed
 - 7.1.5 Mark or otherwise label for identification
 - 7.1.6 Place in storage container
 - 7.1.7 Transport to final or interim storage area
- 7.2 Erect Containment Barrier Around Next Item or Items of Equipment to be Removed (If blanking plate is required, place inside barrier.)
- 7.3 Drain All Fluids from Lines being Removed into Disposal Containment Barrels (Assume all fluids are contaminated until proved otherwise.)
- 7.4 If Necessary, Rig for Support

7.0 PREPARATION PRIOR TO MOVING EQUIPMENT OR INSTALLING BLANKING PLATES (Continued)

- 7.5 If Possible, Crimp Lines to Seal in Contamination
- 7.6 Cut Lines to be Removed
- 7.7 If Removed Line Is Not Sealed, Cap with Plastic Caps and Tape Tight
- 7.8 Install Blanking Plate Where Line Was Removed
- 7.9 Place in Containment Bags and Seal

8.0 EQUIPMENT TRANSPORT

- 8.1 Verify That all Obstructions Have Been Removed from Equipment Being Moved

8.2 Install Blanking Plates

- 8.2.1 Install containment barrier (plastic) around opening to be blanked
Blanking plate shall be inside barrier.
- 8.2.2 Install rigging in position to lift equipment
- 8.2.3 Remove bolts, holding duct to equipment (glove box, etc)
- 8.2.4 Lift duct and separate sufficiently to allow the installation of
blanking plates onto duct and equipment openings (Care must be
taken to guarantee that contamination barrier is not violated.)
- 8.2.5 Set duct onto stable support
- 8.2.6 Install blanking plates onto duct and equipment
- 8.2.7 Radiation survey of blanked ends of ducts and equipment
- 8.2.8 Remove containment barriers enclosing blanked area

8.3 Move Equipment Onto Pallet

- 8.3.1 Lift equipment being removed so that a containment barrier can be
positioned to completely enclose equipment being removed
- 8.3.2 Install and seal containment barrier
- 8.3.3 Test to guarantee seal on containment barrier
- 8.3.4 Swing removed equipment over pallet
- 8.3.5 Slowly lower equipment onto pallet being careful to maintain seal
on containment barrier

8.4 Transport Equipment Being Removed to Retrievable Storage Area

- 8.4.1 Install protective covering over equipment and pallet to be moved
- 8.4.2 Raise pallet from floor and slowly guide over predetermined route
to retrievable storage area
- 8.4.3 Maintain radiation survey on removed equipment and area passed over
while equipment is being moved
- 8.4.4 Radiation survey of contained (sealed) equipment

9.0 EQUIPMENT STORAGE

- 9.1 Move Equipment to Retrievable Storage Box and Load into Retrievable Storage Box
- 9.2 Seal Retrievable Storage Box
- 9.3 Place Equipment and/or Retrievable Storage Box into Retrievable Storage Trench
- 9.4 Leak Test and Radiation Monitor All Boxes
- 9.5 When Retrievable Storage Trench Becomes Full, or Job is Completed, Cover With Earth
- 9.6 Radiation Survey of Area
- 9.7 Record Retrievable Storage Location and Other Data

10.0 CLEAN UP AND REMOVE COLD EQUIPMENT

- 10.1 Remove and Store Electrical Consoles and Switch Boxes Associated with Removed Units
- 10.2 Move Shielding Walls to Storage Room 221
- 10.3 Shielding Walls for Glove Box HI-74S are to be Stored
- 10.4 Decontaminate All Areas Occupied by Removed Glove Boxes
- 10.5 Survey and Render Area Contamination Free
- 10.6 Chip Contaminated Flooring to Depth of 2 Inches and Replace with New Flooring Materials
- 10.7 Paint Entire Area Where Remodeling or Equipment Removal Occurred

Section 2

DMA Equipment Removal Sequence

DMA EQUIPMENT REMOVAL SEQUENCE

VITRO-R-286

The DMA equipment to be removed from the 234-5 Building Inspection Area (see Figure 1) for placement in retrievable storage shall be removed in the following order:

Sequence No.	Nomenclature	Route	Length (ft)	Size	
				Width (ft)	Height (ft)
1	HI-67G Glove Box	B	14-1/2	5-1/2	8
2	HI-71NC Glove Box	B	6	4-1/2	10
3	HI-64GR Glove Box	B	16-1/2	5	7-1/2
4	HI-74S & L Glove Box	B	4-1/2	17	15
5	HI-53-1 Conveyor	B	10	4	7
6	HI-53-2 Conveyor	B	10	4	7
7	HI-53-3 Conveyor	B	10	4	7
8	HI-53-4 Conveyor	B	10	4	7
9	HI-53-5 Conveyor	B	8	4	7
10	HI-65 Glove Box	B			
11	HI-73 Glove Box	B			
12	HI-53-6 Conveyor	B	8	4	7
13	HI-53-7 Conveyor	B	8	4	7
14	HI-52-2 Conveyor	* or D	8	8	7
15	HI- - Hood 192B	* or D	12	5	7
16	HI-52-1 Conveyor	* or D	12	4	7
17	HI-52-3 Conveyor	* or D	12	4	7
18	HI-52-4 Conveyor	* or D	12	4	7
19	HI-52 Elbow Conveyor	* or D	4	5	7
20	HI-52-5 Conveyor	* or D	16	4	7
21	HI-68X-1 X-Ray Conveyor	* or D	8	4	7
	HI-68X-2 X-Ray Conveyor	* or D	8	4	7
	HI-68X-3 X-Ray Conveyor	* or D	8	4	7
22	HI-68X-4 X-Ray Conveyor	* or D	8	4	7
	HI-68X-5 X-Ray Conveyor	* or D	8	4	7
	HI-68X-6 X-Ray Conveyor	* or D	8	4	7
23	HI-68X-7 X-Ray Conveyor	* or D	8	8	7
24	HI-52-6 Conveyor	*D	12	4	7
25	HI-52 Elbow Conveyor	*D	4	5	6
26	HI-52 Elbow Conveyor	*D	4	5	6
27	HI-52 Straight Conveyor	*D	8	4	7
28	HI-52 Elbow Conveyor	D	4	5	6
29	HI-52 Elbow Conveyor	D	4	5	6
30	HI-52-7 Conveyor	D	12	4	7
31	HI-62 Duct	D	8	4	7
32	HI-52-8 Conveyor	D	12	4	7
33	HI-52-9 Conveyor	D	12	4	7
34	HI-53-T Conveyor	B	8	8	7
35	HI-51-8 Conveyor	B	16	4	7
36	HI-61-B Glove Box	D	3-1/2	2-1/2	6
37	HI-51-5 Conveyor	B	16	4	7
38	HI-51-4 Conveyor	B	16	4	7
39	HI-51-3 Conveyor	B	16	4	7
40	HI-51-2 Conveyor	B	12	4	7
41	HI-51-1 Conveyor	D	12	4	7

* Alternate: Roof hatch may be used to remove equipment in Room 192-A.

NOTE.

ALL ITEMS IN CROSS-HATCHED AREAS ARE TO BE REMOVED IN NUMERICAL ORDER AND BY ROUTE SHOWN.

* CAN BE REMOVED USING ROOF HATCH.

-6a-

NOTE: THIS SECTION OF WALL TO BE REMOVED & REPLACED WITH A STD. DOOR. BETWEEN COLUMN LINES 21 & 22.

FIGURE # 1

Section 3

Check Sheets for Equipment Removal, Transport,
and Transuranic Retrievable Storage

Supervisor

Date

CHECK SHEET FOR HI-51

(CONVEYOR)

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off. Noted []

I. Perform radiation survey of equipment area. Survey Performed []

II. Notify security of removal plans (escort to be provided if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise. Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel. []

(Number of electrical disconnections to be made 4).

2. Terminate electrical power to conveyor system. []

3. Disconnect electrical lines from equipment. []

Disconnections to:

Electrical Power (Drive Motor) (2) []

Ventilation System (2) []

B. Pneumatic System

1. Shut off air supply (number of lines to be disconnected varies). []

2. Bleed off air pressure (if required). []

3. Cap or seal all lines of equipment or support equipment. []

4. Prepare equipment for retrievable storage. []

IV. Blanking requirements:

A. Cut off or disconnect conveyor before blanking. []

B. Blank off 5 section breaks (11 total) []

C. Blank off E-4 Exhaust System (2 total) []

CHECK SHEET FOR HI-51 (Continued)

Interface Considerations:

1. Prepare blanking plate(s). []
2. Prepare gaskets. []
3. Install blanking plates. []
4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

A. Lead (if applicable)

Remove lead sheets from surfaces of conveyor. Radiation survey performed. []

B. Glass (if applicable)

Remove leaded glass sheets from surfaces of conveyor. Radiation survey performed. []

C. Anchor Bolts

1. Remove or loosen anchor bolt. []
2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []
3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or airlock removal

Section that joins HA-36 (HI-51A) contains airlock which may require special blanking. Blanking will need to be local manufacture. []

VII. Special precautions:

- A. HI-51 conveyor traverses an underpass. Use special care for working and handling around stairs. []
- B. Ventilation must be available to all glove boxes until each is blanked or sealed. This conveyor only interfaces with HI-61 and HI-53. []

VIII. Estimated weight per section: 2000 lb []

CHECK SHEET FOR HI-51 (Continued)

IX. Accountable Equipment

[]

"F" Numbers:

X. Estimated plutonium content:

[]

XI. A. Box and seal in containers all support equipment to be stored with major inspection equipment.

[]

B. Package and store non-contaminated support equipment in designated areas.

[]

Supervisor

Date

CHECK SHEET FOR HI-52
(CONVEYOR)

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off. Noted []

I. Perform radiation survey of equipment area. Survey Performed []

II. Notify security of removal plans (escort to be provided if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise. Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel. []

(Number of electrical disconnections to be made 4).

2. Terminate electrical power to conveyor system. []

3. Disconnect electrical lines from equipment. []

Disconnections to:

Electrical Power (2) []

Conveyor System Motor (2) []

B. Pneumatic System (as required)

1. Shut off air supply (number of lines to be disconnected varies). []

2. Bleed off air pressure (if required). []

3. Cap or seal all lines of equipment. []

4. Prepare equipment for retrievable storage. []

IV. Blanking requirements:

Cut off conveyor before blanking. []

Blank all ends of sections (28 total). []

Blank opening at HI-51 and HI-53 interface. []

CHECK SHEET FOR HI-52 (Continued)

Interface considerations:

1. Prepare blanking plate(s). []
2. Prepare gaskets. []
3. Install blanking plates. []
4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure:

A. Lead (if applicable)

Remove lead sheets from surfaces of conveyor. Radiation survey performed. []

B. Glass (if applicable)

Remove leaded glass sheets from surfaces of conveyor. Radiation survey performed. []

C. Anchor Bolts

1. Remove or loosen anchor bolts. []
2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []
3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or Airlock Removal Requirement

Remove Conveyor Drive Mechanism. []

Remove Supporting Legs. []

VII. Special Precautions:

A. Ventilation system to be active until the last glove box and conveyor section is removed. []

B. Care must be taken to guarantee that contaminated barrier is not violated. []

CHECK SHEET FOR HI-52 (Continued)

VIII. Estimated weight

Average Section Weight: 3000 lb

[]

IX. Accountable Equipment

[]

"F" Numbers:

X. Estimated plutonium content:

[]

XI. A. Box and seal in containers all support equipment to be stored with major inspection equipment.

[]

B. Package and store non-contaminated support equipment in designated areas.

[]

Supervisor

Date

CHECK SHEET FOR HI-53
(CONVEYOR)

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off. Noted []

I. Perform radiation survey of equipment area. Survey Performed []

II. Notify security of removal plans (escort to be provided if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise. Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel. []

(Number of electrical disconnections to be made: 4).

2. Terminate electrical power to conveyor system. []

3. Disconnect electrical lines from equipment. []

Disconnections to:

Drive Motor 1 hp (Conveyor) []

B. Pneumatic Systems (if applicable)

1. Shut off air supply (number of lines to be disconnected varies). []

2. Bleed off air pressure (if required). []

3. Cap or seal all lines of equipment or support equipment. []

4. Prepare equipment for storage. []

IV. Blanking requirements: approximately 25 total

A. Blank off interfaces with: HI-73 (6) []

HI-74 (3) []

HI-65 (5) []

CHECK SHEET FOR HI-53 (Continued)

HI-67 (4)	[]
HI-71 (3)	[]
HI-64 (2)	[]
HI-51 (2)	[]
HI-52 (2)	[]
B. Blank off interface at section breaks.	[]
C. Blank off interface with HI-51 last.	[]
D. Interface considerations	
1. Prepare blanking plate(s).	[]
2. Prepare gaskets.	[]
3. Install blanking plates.	[]
4. Seal with tape after blanking plate installation.	[]
V. Strip Down Procedure	
A. Lead (if applicable)	
Remove lead sheets from surfaces of conveyor equipment.
Radiation survey performed.	[]
B. Glass (if applicable)	
Remove leaded glass sheets from surfaces of conveyor.
Radiation survey performed.	[]
C. Anchor Bolts	
1. Remove or loosen anchor bolts.	[]
2. Fabricate and install temporary supports for equipment
support to facilitate removal of legs.	[]
3. Install rigging in position to lift equipment.	[]
4. Prepare ducting for disconnection from equipment and
shore up as required to hold position.	[]
5. Enclose equipment area of item to be removed in plastic
film. Allow adequate looseness of cover to facilitate
other additional removal requirements.	[]
VI. Base or airlock removal requirement	
Remove conveyor drive mechanism.	[]
Remove supporting legs.	[]

CHECK SHEET FOR HI-53 (Continued)

VII. Special precautions:

A. Ventilation system to be active until the last glove box and conveyor section is removed.

[]

B. Care must be taken to guarantee that contaminated barrier is not violated.

[]

VIII. Estimated weight:

Average section weight: 2000 lb

[]

IX. Accountable Equipment

[]

"F" Numbers:

X. Estimated plutonium content:

[]

XI. A. Box and seal in containers all support equipment to be buried with major inspection equipment.

[]

B. Package and store non-contaminated support equipment in designated areas.

[]

Supervisor

Date

CHECK SHEET FOR HI-61 REMOVAL

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off. Noted []

I. Perform radiation survey of equipment area. Survey Performed []

II. Notify security of removal plans (escort to be provided if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise. Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electrical power at master circuit breaker panel. []

(Number of electrical disconnections to be made 6).

2. Terminate electrical power to conveyor system. []

3. Disconnect electrical lines from equipment. []

4. Disconnect electrical lines to instrumentation mounted on equipment. []

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb. []

Disconnects to:

- Balance []
- Gear Motor Below (2) []
- Control Panel (2) []
- Relay and Junction Box (1) []
- Dew Point Analyzer (1) []
- Instrumentation (2) []

B. Pneumatic Systems

1. Shut off air supply (dry air to balance--lines to be disconnected 2). []

CHECK SHEET FOR HI-61 REMOVAL (Continued)

2. Bleed off air pressure (if required). []

3. Cap or seal all lines of equipment or support equipment. []

IV. Blanking Requirements:

Blank off with blanking plate and tape shut radiation survey performed. []

Interfaces:

• Balance and Top HI-61 Assembly (2) []

• Possible interface between upper and lower units (2) []

• Conveyor Blanking (2) []

Interface considerations:

1. Prepare blanking plate(s). []

2. Prepare gaskets. []

3. Install blanking plates. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

A. Appurtenance removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []

2. Remove all units that penetrate glove box or equipment (if safe). Radiation survey performed. []

B. Lead

Remove lead sheets from surfaces of equipment. Radiation survey performed. []

C. Glass

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed. []

D. Anchor Bolts

1. Remove or loosen anchor bolts. []

2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []

CHECK SHEET FOR HI-61 REMOVAL (Continued)

3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or airlock removal requirements

- Remove drive transfer and sweep mechanism under HI-61 before shortening legs. []
- Shorten base support to 3 in. or 4 in. for storage. []
- Remove bracket support for motor. []

VII. Special precautions:

Removing platform in front of HI-61 will facilitate equipment removal.

- A. Disconnect ducting to equipment (ventilation) and blank off. Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

- B. Perform radiation survey of blanked ends of ducting. []

VIII. Estimated weight: 1000 lb []

IX. Accountable Equipment []

"F" Number: _____

X. Estimated plutonium content: _____ []

XI. A. Box and seal in containers all support equipment to be placed in retrievable storage with major inspection equipment. []

B. Package and store non-contaminated support equipment in designated areas. []

Supervisor

Date

CHECK SHEET FOR HI-64

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off. Noted []

I. Perform radiation survey of equipment area. Survey Performed []

II. Notify security of removal plans (escort to be provided if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant will be used for contamination control throughout removal exercise. Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel. []

(Number of electrical disconnections to be made 4). []

2. Terminate electrical power to conveyor system. []

3. Disconnect electrical lines from equipment. []

4. Disconnect electrical lines to instrumentation mounted on equipment. []

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb. []

Disconnects to:

Electrical Controls []

Fluorescent Lighting Fixtures (Top) []

Recorder Unit (Top) []

B. Water System

1. Shut off water supply at source. []

2. Bleed pressure from lines (if required). []

3. Drain water into liquid waste retrievable storage containers. []

4. Wipe up spillage.

CHECK SHEET FOR HI-64 (Continued)

5. Cap and seal all lines of equipment and support equipment. []

Disconnects to:

Waterlines (4)--Plug with 1/4 in. pipe plug. []

C. Pneumatic Systems (as applicable)

1. Shut off air supply (number of lines to be disconnected _____). []

2. Bleed off air pressure (if required). []

3. Cap or seal all lines of equipment or support equipment. []

4. Prepare equipment for placement in retrievable storage []

Disconnect for:

Recirculation--Air (13 breaks plus plenum supply and return) []

IV. Blanking Requirements

Blank off with blanking plate and tape shut. Radiation survey performed. []

Blanking interfaces:

Approximately 13 blanks required (cut to fit) for recirculation system. []

Conveyor blank off (2) []

Interface considerations:

1. Prepare blanking plate(s). []

2. Prepare gaskets. []

3. Install blanking plates. []

4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []

CHECK SHEET FOR HI-64 (Continued)

2. Remove all units that penetrate glove box or equipment (if safe). Radiation survey performed. []

3. Blank off with blanking plate and tape shut. Radiation survey performed. []

B. Lead (if applicable)

Remove lead sheets from surfaces of equipment. Radiation survey performed. []

C. Glass

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed. []

D. Anchor Bolts

1. Remove or loosen anchor bolts. []

2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []

3. Install rigging in position to lift equipment. []

4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []

5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or airlock removal requirements:

Legs (10) need to be cut off. []

VII. Special precautions:

A. Disconnect ducting to equipment (ventilation) and blank off. Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

B. Perform radiation survey of blanked ends of ducting. []

VIII. Estimated weight: 3000 lb []

IX. Accountable Equipment: []

"F" Numbers: _____

CHECK SHEET FOR HI-64 (Continued)

X. Estimated plutonium content: _____ []

XI. A. Box and seal in containers all support equipment to be placed
in retrievable storage with major inspection equipment. []

B. Package and store non-contaminated support equipment in design-
ated areas. []

Supervisor

Date

CHECK SHEET FOR HI-65

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off.

Noted []

I. Perform radiation survey of equipment area.

Survey Performed []

II. Notify security of removal plans (escort to be provided if required).

[]

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise.

Noted []

III. Services to be disconnected:

A. Electrical (8 disconnects)

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel.

[]

2. Terminate electrical power to conveyor system.

[]

3. Disconnect electrical lines from equipment.

[]

4. Disconnect electrical lines to instrumentation mounted on equipment.

[]

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb.

[]

Disconnects to:

Electrical Power and Controls

[]

Motor for Sweep

[]

Gear Motor--Turntable

[]

IV. Blanking Requirements:

Blank off with blanking plate and tape shut. Radiation survey performed. []

Blanking interfaces: (8)

Filter (2)

[]

E-4 Supply (4)

[]

Conveyor (2)

[]

CHECK SHEET FOR HI-65 (Continued)

Interface considerations:

1. Prepare blanking plate(s). []
2. Prepare gaskets. []
3. Install blanking plates. []
4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []
2. Remove all units that penetrate glove box or equipment. Radiation survey performed. []
3. Blank off with blanking plate and tape shut. Radiation survey performed. []

B. Lead

Remove lead sheets from surfaces of equipment. Radiation survey performed. []

C. Glass

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed. []

D. Anchor Bolts

1. Remove or loosen anchor bolts. []
2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []
3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or airlock requirements:

Remove four legs and support bracing. []

CHECK SHEET FOR HI-65 (Continued)

VII. Special precautions:

- A. Disconnect ducting to equipment (ventilation) and blank off.
Lift ducting to facilitate blanking installation.

[]

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

- B. Perform radiation survey of blanked ends of ducting.

[]

VIII. Estimated weight: 4000 lb

[]

IX. Accountable Equipment

[]

"F" Numbers:

X. Estimated plutonium content: _____

[]

- XI. A. Box and seal in containers all support equipment to be buried with major inspection equipment.

[]

- B. Package and store non-contaminated support equipment in designated areas.

[]

Supervisor

Date

CHECK SHEET FOR HI-67

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off.

Noted []

I. Perform radiation survey of equipment area.

Survey performed []

II. Notify security of removal plans (escort to be provided, if required).

[]

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise.

Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel.

[]

(Number of electrical disconnections to be made: 6)

2. Terminate electrical power to conveyor system.

[]

3. Disconnect electrical lines from equipment.

[]

4. Disconnect electrical lines to instrumentation mounted on equipment.

[]

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb.

[]

Disconnect to:

• Controls (2)

[]

• Comparator Unit (2)

[]

• Refrigeration Unit (1)

[]

• Sweep Assembly Motor (1)

[]

B. Hydraulic System (if applicable)

NOTE: Relieve pressure from system (if possible) using bleed valves for safety.

Noted []

CHECK SHEET FOR HI-67 (Continued)

1. Disconnect or cut lines as close to equipment as practical. []
2. Drain hydraulic lines and systems into special liquid waste retrievable storage containers. []
3. Wipe lines and immediate area for excess hydraulic fluid (including spillage). Apply non-slip powder to floor areas as required. []
4. Cap and seal all lines of equipment and related support equipment to be removed. []
5. Verify that drained liquids are free of contamination. []
6. Prepare hydraulic equipment for placement in retrievable storage with related equipment being removed. []

C. Refrigeration Systems

CAUTION: Workmen to be attired in proper protective clothing and face masks (as required).

Noted []

1. Verify that refrigeration equipment is free of contamination. []
(Number of lines to be disconnected: 4)
2. Bleed of system pressure (if required). []
3. Disconnect or cut refrigeration lines as close to equipment as practicable. []

NOTE: If verified as clean, refrigeration support equipment may be stored.

[]

4. Refrigeration equipment and accessories are to be cleaned, wiped, and packaged for storage.

Noted []

D. Pneumatic Systems (if applicable)

1. Shut off air supply. []
(Number of lines to be disconnected:)
2. Bleed off air pressure (if required). []
3. Cap or seal all lines of equipment or support equipment. []
4. Prepare equipment for placement in retrievable storage. []

CHECK SHEET FOR HI-67 (Continued)

IV. Blanking Requirements:

Blank off with blanking plate and tape shut. Radiation survey performed.

[]

Blanking interfaces:

- Filter (2)
- Conveyor (2)
- Arrangement (2)

[]

[]

[]

Interface Considerations:

1. Prepare blanking plate(s)
2. Prepare gaskets.
3. Install blanking plates.
4. Seal with tape after blanking plate installation.

[]

[]

[]

[]

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item.

[]

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed.
2. Remove all units that penetrate glove box or equipment. Radiation survey performed.
3. Blank off with blanking plate and tape shut. Radiation survey performed.

[]

[]

[]

B. Lead

Remove lead sheets from surfaces of equipment. Radiation survey performed.

[]

C. Glass

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed.

[]

D. Anchor Bolts

1. Remove or loosen anchor bolts.

[]

CHECK SHEET FOR HI-67 (Continued)

2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []
3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or Airlock Removal

- Approximate leg cut off height is 28 in. above floor. []
- Airlock on rear (welded); therefore, no removal. []
- Remove arrangement. []
- E4 System--Blank off conveyor. []

VII. Special Precautions:

- A. Disconnect ducting to equipment (ventilation) and blank off. Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

- B. Perform radiation survey of blanked ends of ducting. []

VIII. Estimated weight: 3500 lb []

IX. Accountable Equipment []

"F" Numbers: _____

X. Estimated Plutonium Content: _____ []

- XI. A. Box and seal in containers all support equipment to be sealed in retrievable storage with major inspection equipment. []

- B. Package and store non-contaminated support equipment in designated areas. []

Supervisor

Date

CHECK SHEET FOR HI-68

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off.

Noted []

- I. Perform radiation survey of equipment area. Survey performed []
- II. Notify security of removal plans (escort to be provided, if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise.

Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel. []
- (Number of electrical disconnections to be made: 4)
2. Terminate electrical power to conveyor system []
3. Disconnect electrical lines from equipment. []
4. Disconnect electrical lines to instrumentation mounted on equipment. []
5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb. []

Disconnects to:

- Controls []
- Motor, Drive 1/2 hp []
- Filter Exhaust Assembly []
- Conveyor []

B. Pneumatic System (if applicable)

1. Shut off air supply (number of lines to be disconnected _____). []
2. Bleed off air pressure (if required). []

CHECK SHEET FOR HI-68 (Continued)

3. Cap or seal all lines of equipment or support equipment. []

4. Prepare equipment for placement in retrievable storage. []

IV. Blanking Requirements:

Blank off with blanking plate and tape shut. Radiation survey performed. []

Interfaces:

HI-52 Joint (2) []

Blanking for each three sections (4) []

Filter Exhaust (2) []

Interface considerations:

1. Prepare blanking plate(s). []

2. Prepare gaskets. []

3. Install blanking plates. []

4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []

2. Remove all units that penetrate glove box or equipment. Radiation survey performed. []

3. Blank off with blanking plate and tape shut. Radiation survey performed. []

B. Lead (if applicable)

Remove lead sheets from surfaces of equipment. Radiation survey performed. []

C. Glass (if applicable)

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed. []

CHECK SHEET FOR HI-68 (Continued)

D. Anchor Bolts

1. Remove or loosen anchor bolts. []
2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []
3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or Airlock Removal Requirements

Legs to be cut off approximately 20-24 in. above floor. []

VII. Special Precautions for Removal

Ventilation system to be active until all sections are removed. Noted []

- A. Disconnect ducting to equipment (ventilation) and blank off. Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

- B. Perform radiation survey of blanked ends of ducting. []

VIII. Estimated weight: 4800 lb []

IX. Accountable Equipment []

"F" Numbers: _____

X. Estimated Plutonium Content: _____ []

- XI. A. Box and seal in containers all support equipment to be placed in retrievable storage with major inspection equipment. []

B. Package and store non-contaminated support equipment in designated areas. []

Supervisor

Date

CHECK SHEET FOR HI-71

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off.

Noted []

I. Perform radiation survey of equipment area.

Survey performed []

II. Notify security of removal plans (escort to be provided, if required).

[]

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise.

Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel.

[]

(Number of electrical disconnections to be made: 9)

2. Terminate electrical power to conveyor system.

[]

3. Disconnect electrical lines from equipment.

[]

4. Disconnect electrical lines to instrumentation mounted on equipment.

[]

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb.

[]

Electrical disconnects to:

• Fluorescent Lighting (4)

[]

• Hydraulic Pump System (2)

[]

• Neutron Counter (3)

[]

• Geared Motor (Sweep Drive) (2)

[]

B. Hydraulic Systems

NOTE: Relieve pressure from system (if possible) using bleed valves for safety.

Noted []

CHECK SHEET FOR HI-71 (Continued)

1. Disconnect or cut lines as close to equipment as practical. []
2. Drain hydraulic lines and systems into special liquid waste retrievable storage containers. []
3. Wipe lines and immediate area for excess hydraulic fluid (including spillage). Apply non-slip powder to floor areas as required. []
4. Cap and seal all lines of equipment and related support equipment to be removed. []
5. Verify that drained liquids are free of contamination. []
6. Prepare hydraulic equipment for placement in retrievable storage with related equipment being removed. []

Disconnect:

- Two hydraulic cylinders and drain. []

NOTE: Hydraulic pump unit is common to HI-71 & HI-73.

- C. Remove access platform above HI-71 and ladder. []

IV. Blanking Requirements:

Blank off with blanking plate and tape shut. Radiation survey performed. []

Blanking interfaces:

- Conveyor (2) []
- Neutron Counter (2) []

Interface considerations:

1. Prepare blanking plate(s) []
2. Prepare gaskets. []
3. Install blanking plates. []
4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

CHECK SHEET FOR HI-71 (Continued)

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []
2. Remove all units that penetrate glove box or equipment. Radiation survey performed. []
3. Blank off with blanking plate and tape shut. Radiation survey performed. []

B. Lead (if applicable)

Remove lead sheets from surfaces of equipment. Radiation survey performed. []

C. Glass

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed. []

D. Anchor Bolts

1. Remove or loosen anchor bolts. []
2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []
3. Install rigging in position to lift equipment. []
4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []
5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

VI. Base or Airlock Removal Requirements:

Support legs (8) to be cut off as close to hood as practicable. []

VII. Special Precautions:

Use extra caution if it is possible to remove shielded chambers. []

- A. Disconnect ducting to equipment (ventilation) and blank off. Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

CHECK SHEET FOR HI-71 (Continued)

B. Perform radiation survey of blanked ends of ducting.

[]

VIII. Estimated weight: 7000 lb

[]

IX. Accountable Equipment

"F" Numbers:

X. Estimated Plutonium Content: _____

[]

XI. A. Box and seal in containers all support equipment to be sealed in retrievable storage with major inspection equipment.

[]

B. Package and store non-contaminated support equipment in designated areas.

[]

Supervisor

Date

CHECK SHEET FOR HI-73 REMOVAL

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off. Noted []

I. Perform radiation survey of equipment area. Survey Performed []

II. Notify security of removal plans (escort to be provided if required). []

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise. Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel. []

(Number of electrical disconnections to be made 18).

2. Terminate electrical power to conveyor system. []

3. Disconnect electrical lines from equipment. []

4. Disconnect electrical lines to instrumentation mounted on equipment. []

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb. []

Disconnects to:

Control Station Panel (4) []

Lighting Panel (2) []

Disconnect Switch (4) []

Fire Detector Unit (2) []

Heaters (4) []

Temperature Indicator Probe (2)

B. Hydraulic System

NOTE: Relieve pressure from system (if possible) using bleed valves for safety. (This system is common with HI-71.) Noted []

CHECK SHEET FOR HI-73 REMOVAL (Continued)

1. Disconnect or cut (2) lines as close to equipment as practical. (Hydraulic pump and cylinders, 4 disconnects). []
2. Drain hydraulic lines and system into special liquid waste retrievable storage containers. []
3. Wipe lines and immediate area for excess hydraulic fluid (including spillage). Apply non-slip powder to floor areas as required. []
4. Cap and seal all lines of equipment and related support equipment to be removed. []
5. Verify that drained liquids are free of contamination. []
6. Prepare hydraulic equipment for placement in retrievable storage with related equipment being removed. []

C. Refrigeration System (units No. 1 and No. 2)

CAUTION: Workmen to be attired in proper protective clothing and face masks (as required).

Noted []

1. Verify that refrigeration equipment is free of contamination. (Number of lines to be disconnected 4.) []
2. Bleed off system pressure (if required). []
3. Disconnect or cut refrigeration lines as close to equipment as practicable. []

NOTE: If verified as clean, refrigeration support equipment may be stored, not buried.

[]

4. Refrigeration equipment and accessories are to be cleaned, wiped, packaged for storage.

Noted []

D. Pneumatic System (dry air supply--nitrogen)

1. Shut off air supply (number of lines to be disconnected 2.) []
2. Bleed off air pressure (if required). []
3. Cap or seal all lines of equipment or support equipment. []
4. Prepare equipment for placement in retrievable storage. []

IV. Blanking requirements:

Blank off with blanking plate and tape shut.

[]

Radiation survey performed.

[]

CHECK SHEET FOR HI-73 REMOVAL (Continued)

Blank off conveyor. []

Blank off E-4 system (supply and exhaust). []

Interface considerations:

1. Prepare blanking plate(s). []

2. Prepare gaskets. []

3. Install blanking plates. []

4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []

2. Remove all units that penetrate glove box or equipment. Radiation survey performed. []

3. Blank off with blanking plate and tape shut. Radiation survey performed. []

B. Lead (if applicable)

Remove lead sheets from surfaces of equipment. Radiation survey performed. []

C. Glass (if applicable)

Remove leaded glass sheets from surfaces of equipment. Radiation survey performed. []

D. Anchor Bolts

1. Remove or loosen anchor bolts. []

2. Fabricate and install temporary supports for equipment support to facilitate removal of legs. []

3. Install rigging in position to lift equipment. []

4. Prepare ducting for disconnection from equipment and shore up as required to hold position. []

5. Enclose equipment area of item to be removed in plastic film. Allow adequate looseness of cover to facilitate other additional removal requirements. []

CHECK SHEET FOR HI-73 REMOVAL (Continued)

VI. Base or airlock removal requirements

A. 8 legs to be cut off approximately 4 ft above floor. []

B. Two hydraulic cylinders extend below floor level; fill in is required. []

VII. Special precautions:

A. Disconnect ducting to equipment (ventilation) and blank off. Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier is not violated.

B. Perform radiation survey of blanked ends of ducting. []

VIII. Estimated weight: 6000 lb []

IX. Accountable Equipment []

"F" Numbers:

_____	_____
_____	_____
_____	_____

X. Estimated plutonium content: _____ []

XI. A. Box and seal in containers all support equipment to be placed in retrievable storage with major inspection equipment. []

B. Package and store non-contaminated support equipment in designated areas. []

Supervisor

Date

CHECK SHEET FOR HI-74

CAUTION: Ventilation system (negative pressure) to function continuously and be the last system to be sealed off.

Noted []

I. Perform radiation survey of equipment area.

Survey Performed []

II. Notify security of removal plans (escort to be provided if required).

[]

NOTE: Plastic film techniques and fixing of contamination with adherent film (fire resistant) will be used for contamination control throughout removal exercise.

Noted []

III. Services to be disconnected:

A. Electrical

1. Terminate equipment and accessory equipment electric power at master circuit breaker panel.

[]

(Number of electrical disconnections to be made 19).

2. Terminate electrical power to conveyor system.

[]

3. Disconnect electrical lines from equipment.

[]

4. Disconnect electrical lines to instrumentation mounted on equipment.

[]

5. Remove any exterior instrumentation from equipment in a manner which does not penetrate contaminated enclosure on equipment. If instrumentation cannot be removed with safety, do not disturb.

[]

Disconnects to:

Controls (2)

[]

Dew Point Indicator (1)

[]

Control Station (6)

[]

Fire Alarm System (2)

[]

Norgren Filter (1)

[]

Magnetic Gauge (1)

[]

Electric Lighting (6)

[]

Fire Alarm System (2)

[]

CHECK SHEET FOR HI-74 (Continued)

B. Hydraulic Systems

NOTE: Relieve pressure from system (if possible) using bleed valves for safety.

Noted []

1. Disconnect or cut lines as close to equipment as practical. []
2. Drain hydraulic lines and systems into special liquid waste retrievable storage containers. []
3. Wipe lines and immediate area for excess hydraulic fluid (including spillage). Apply non-slip powder to floor areas as required. []
4. Cap and seal all lines of equipment and related support equipment to be removed. []
5. Verify that drained liquids are free of contamination. []
6. Prepare hydraulic equipment for placement in retrievable storage with related equipment being removed. []

IV. Blanking requirements:

Blank off with blanking plate and tape shut. Radiation survey performed. []

Blanking interfaces:

- Conveyor []
- E-4 Exhaust []
- Loadout Section []

Interface considerations:

1. Prepare blanking plate(s). []
2. Prepare gaskets. []
3. Install blanking plates. []
4. Seal with tape after blanking plate installation. []

V. Strip Down Procedure

NOTE: Radiation survey to be performed after removal of each item. []

A. Appurtenance Removal

1. Remove all units that do not penetrate glove box or equipment. Radiation survey performed. []

CHECK SHEET FOR HI-74 (Continued)

2. Remove all units that penetrate glove box or equipment.
Radiation survey performed. []

3. Blank off with blanking plate and tape shut. Radiation
survey performed. []

B. Lead

Remove lead sheets from surfaces of equipment. Radiation
survey performed. []

C. Glass

Remove leaded glass sheets from surfaces of equipment. Radia-
tion survey performed. []

D. Anchor Bolts

1. Remove or loosen anchor bolts. []

2. Fabricate and install temporary supports for equipment
support to facilitate removal of legs. []

3. Install rigging in position to lift equipment. []

4. Prepare ducting for disconnection from equipment and
shore up as required to hold position. []

5. Enclose equipment area of item to be removed in plastic
film. Allow adequate looseness of cover to facilitate
other additional removal requirements. []

VI. Base or airlock removal requirements:

Loadout Section--cut off support legs. []

Storage and Elevator Section--cut off support legs. []

Elevator Lift Cylinder--remove and replace flooring. []

E-4 System--blank off (conveyor). []

VII. Special precautions:

A. Disconnect ducting to equipment (ventilation) and blank off.
Lift ducting to facilitate blanking installation. []

CAUTION: Care must be taken to guarantee that contamination barrier
is not violated.

B. Perform radiation survey of blanked ends of ducting. []

VIII. Estimated weight: 7000 lb []

CHECK SHEET FOR HI-74 (Continued)

IX. Accountable Equipment

[]

"F" Numbers: _____

X. Estimated plutonium content: _____

[]

XI. A. Box and seal in containers all support equipment to be buried
with major inspection equipment.

[]

B. Package and store non-contaminated support equipment in designated
areas.

[]

CE0948

VITRO-R-286
Addendum I

SEQUENCE AND CHECK SHEETS FOR THE
DIVISION OF MILITARY APPLICATION (DMA) EQUIPMENT
REMOVAL FROM 234-5Z BUILDING

HI Line Equipment

H. E. Adkins
H. C. Stahl

This addendum describes revised special procedures
for removal of HI-74 from the 234-5Z Building.

July 1974

VITRO ENGINEERING • architects • engineers
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For the U.S. Atomic Energy Commission
Contract No. AT(45-1)-1698

REVISED SPECIAL PROCEDURES
FOR HI-74 REMOVAL

1. Remove oil from vacuum pump after sampling and place in waste container.
2. Remove hydraulic fluid from hydraulic unit after sampling and place in waste container.
3. Remove water panels and paraffin (neutron shielding arrangement) where feasible to reduce weight.
4. Disconnect and remove vacuum pump assembly from under glove box.
5. Disconnect and remove hydraulic unit from under glove box.
6. Separate Leg #2 (right and left) at separation level shown on Sketch 1.
7. Reposition Leg #2 (right and left) and wedge for support at a location about midway between cut-off point of Leg #2 and Leg #3 (Position I, see Sketch 2).
8. Using a greenhouse (double greenhouse, if necessary), separate and blank off lower glove box from elevator section (see Sketch 2).
9. Move Leg #2 (right and left) to a new support location about even with either side of the elevator hydraulic cylinder. Wedge firmly into a supporting position (Position II; see Sketch 2).
10. Cut off Leg #3 (right and left) and remove. This should provide adequate clearance for removal of glove box from under the storage section (see Sketch 2).
11. Remove glove box from under storage section and store with temporary E-4 exhaust until moved from building.
12. Move Leg #2 (right and left) to Position I, per Step 7.
13. Reestablish greenhouse configuration around the lower elevator section. (Use double greenhouse protection for added safety).
14. Cut off lower part of elevator section just below lower support frame for storage section (see Sketch 3).
15. Separate and blank off elevator section from conveyor. Also disconnect lift cylinder from lift pallet.
16. Remove conveyor section (Item 5 removal sequence) from elevator HI-74 support frame. Blank off all conveyor openings as part of the removal process. (Remove greenhouse as required.)

17. With lower glove box removed, lower portion of elevator section removed, and conveyor section removed, reposition Leg #2 and Leg #3 (right and left) to original location and weld firmly to support frame. Support frame will be utilized to lower storage section to the floor dollies (see Sketch 3).

CAUTION: Strip off lead plates from outer end of storage section if required. Also remove any other possible weight from end opposite conveyor. This will increase the margin of safety by placing C.G. closer to the center of the glove box.

18. Using a come-along on each of two nylon straps (min. 10,000 lb load webbing), extend bands over upper support frame and down under storage section, between storage section and support frame (see Sketch 3).
19. Unbolt storage section from support frame and carefully release straps simultaneously to lower storage section to dollies on floor.
20. Cut sections of the support frame to facilitate its removal from above and around the storage section.
21. Remove support frame from the area and scrap.
22. Remove any floor pads or other floor obstructions under equipment to provide clean floor area for transport.
23. Move the storage section and partial elevator section from the area after removing straps and come-along equipment.
24. Remove lift cylinder from pit and restore pit to original floor condition.

SKETCH 1

FOR
LOCATION
SUBJECT

DESIGN ANALYSIS

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BLDG NO. 234-5Z
REMOVAL PROCEDURE
FOR HI-74-S

VITRO-R-286
Addendum 1

1/15/74

SKETCH 2

FOR
LOCATION
SUBJECT

DESIGN ANALYSIS

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FOR HI-74-S

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SKETCH 3

FOR
LOCATION
SUBJECT

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Addendum 1